

KAIWEETS

User Manual

Digital Multimeter

True-RMS

HT118A

Made in China



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Safety Instructions

The instrument is designed according to the requirements of the international electrical safety standard IEC61010-1 for the safety requirements of the electronic testing instruments. The design and manufacture of instruments strictly comply with the requirements of IEC61010-1 CAT.III 1000V over-voltage safety standards and pollution level 2.



Warning

In order to avoid possible electric shock or personal injury and other safety accidents, please abide by the following specifications:

- Please read this manual carefully before using the instrument, and pay special attention to safety warning information.
- Before using the instrument, please check whether there is any crack or plastic damage in the instrument case. If you do, do not use it again.

- Before using the instrument, please check whether the probe is cracked or damaged. If so, please replace the same type and the same electrical specifications.
- Please comply with local and national safety code. Wear personal protection equipment (such as approved rubber gloves, masks and flame retardant clothes, etc.) to prevent being damaged by electric shock and electric arc due to exposed hazardous live conductor

Safety Operating Procedures

- Before opening the outer cabinet or battery cover, please remove the probe on the instrument. Do not use the instrument in the circumstances that the instrument is taken apart or battery cover is opened.
- When using the probe, please put your fingers behind the finger protector of the probe.












- When measuring, please connect the zero line or the ground line firstly, then connect the live wire; but when disconnecting, please disconnect the live wire firstly, then disconnect the zero line and ground line.
- When it shows low battery indicator, please replace the battery in time in case of any measurement error.
- It only meets the safety standards when the instrument is used together with the supplied probe. If the probe is damaged and needs to replace, the probe with same model number and same electrical specifications must be used for replacement.

Cautions

- Do not use the instrument around explosive gas, steam or in wet environment.
- The instrument shall be used in accordance with the specified measurement category, voltage or current rating.
- Please be careful if the measurement exceeds 30V AC true RMS, 42V AC peak or 60V DC. There may be danger of electric shock at this kind of voltage
- By measuring the known voltage to check whether the meter work is normal, if it is not normal or damaged, do not use it again.

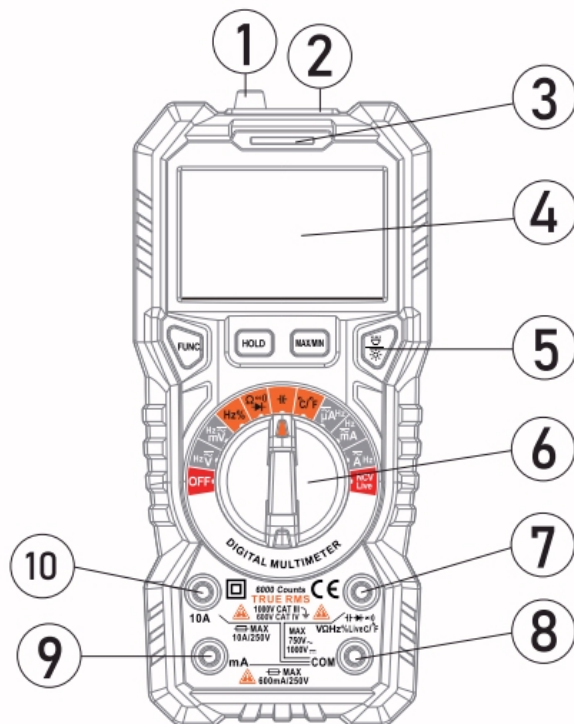
Product Description

Symbol Meaning

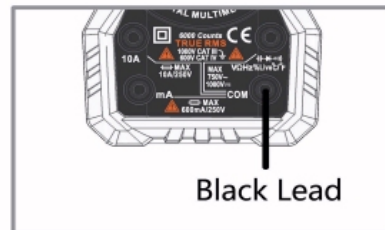
	Dangerous Voltage may be present		Warning; Important information
	AC (Alternating Current)		AC and DC
	DC (Direct current)		
	Earth ground		Fuse
	Low Battery		Double insulated
	Complies with EU directives		
	Do not dispose of this product as unsorted municipal waste.		

CAT II	Suitable for testing and measuring circuits directly connected to power points (sockets and similarities) of low voltage power installations.
CAT III	Suitable for testing and measuring circuits connected to the distribution part of low voltage power supply devices in buildings.
CAT IV	Suitable for testing and measuring circuits connected to the power supply of low voltage power installations in buildings.





Multimeter Features




- ① NCV probe
- ② Flashlight
- ③ Red / Green Light
- ④ LCD display (bicolored)
- ⑤ Function Key
- ⑥ Rotary Switch $\text{V}\Omega\text{Hz}\% \text{Live}$
- ⑦ V-Terminal
- ⑧ COM Terminal
- ⑨ mA, uA Terminal
- ⑩ 10A Terminal



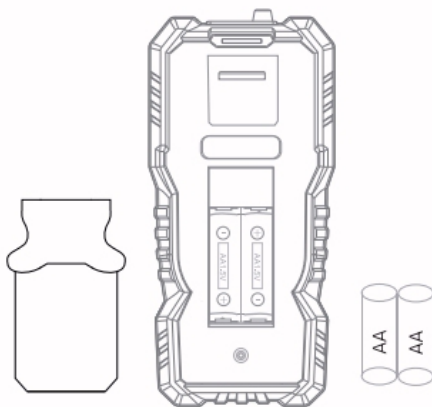
FUNC. Key

	Press the FUNC button to select the appropriate measurement function.
	Press the " HOLD" key, hold the data for easier recording. Press the button again to remove the hold function.
	Press the MAX/MIN key to enter the MAX/MIN mode. In this mode, the multimeter will capture the highest/lowest reading it records. Press and hold this button again to exit the Max/Min Modes.
	Backlight: Press once to turn on the display backlight. Press once more to turn off backlight
	Flashlight: Long-press more than 2 seconds, to turn on/off the flashlight.

Install or replace the battery

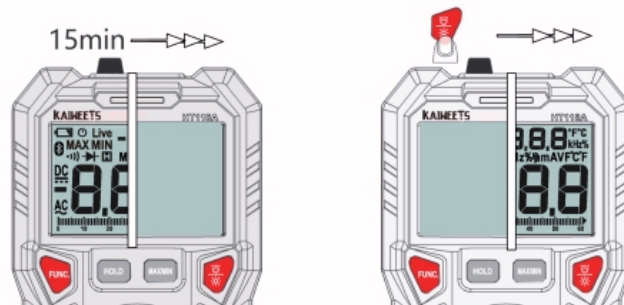
If the "  " symbol appears on the display, the battery should be replaced immediately. Disconnect the test leads from the input terminals of the meter and turn off the meter. Remove the rubber sleeve and the screws on the back of the multimeter to replace the battery.

After that, re-apply the compartment cover and reinstall the screw firmly.



Sleep Mode

- The Meter automatically enters sleep mode if there is no operation for 15 minutes to save battery energy. Pressing any button or turning the rotary switch awakes the Meter.
- If you press the "FUNC." button and turn on the meter, the sleep mode will be deactivated. After turning off the meter, The Meter will restore Sleep Mode after power off.



Measurement Operation

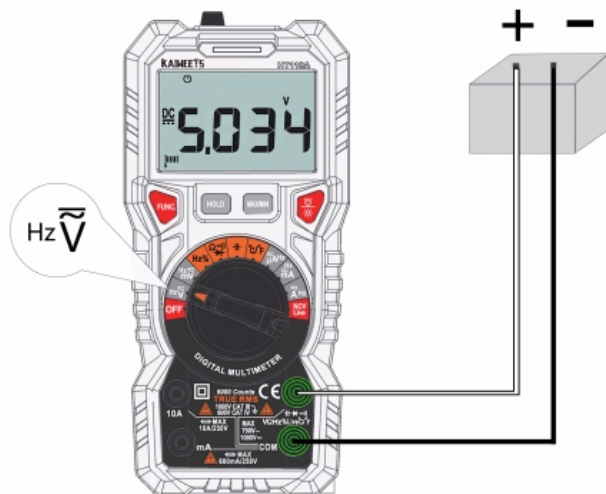
DC/AC voltage measurement

 Don't use it to test DC1000V or AC750V, the instrument may be damaged.

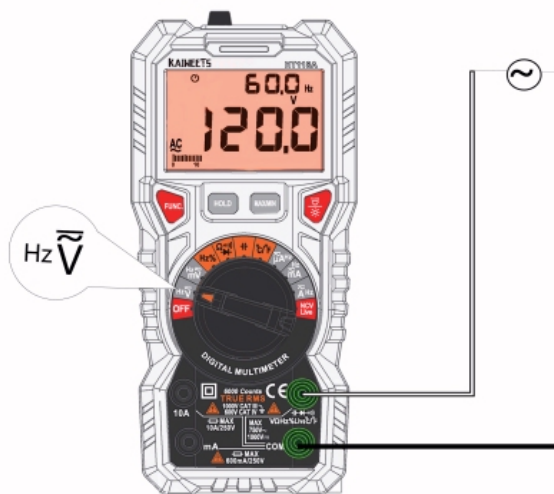
Always test known voltage with the meter before use to confirm the instrument function is intact.

- 1) Turn the rotary switch to “ Hz \widetilde{V} ” and select DC/AC voltage function by "FUNC." key
- 2) Insert the red lead in “ $\overrightarrow{V\Omega Hz \% Live}$ ” terminal, insert the black lead in “COM” terminal.
- 3) Connect the test leads to the source or load to be measured.
- 4) Read LCD display, when measuring AC voltage the frequency is displayed simultaneously.

DC


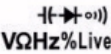


FUNC. → AC

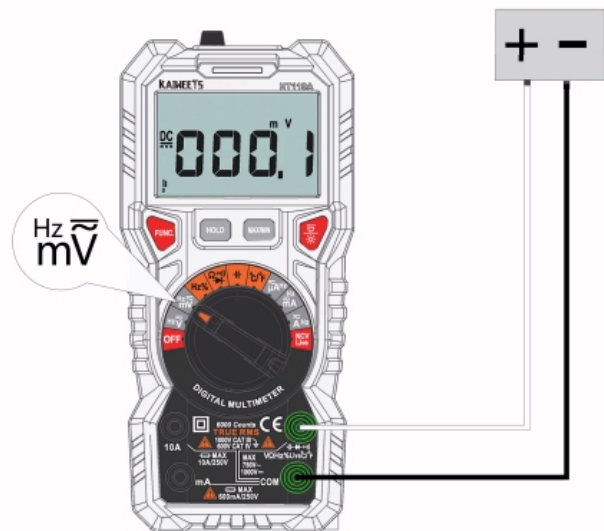


DC/AC voltage mV measurement

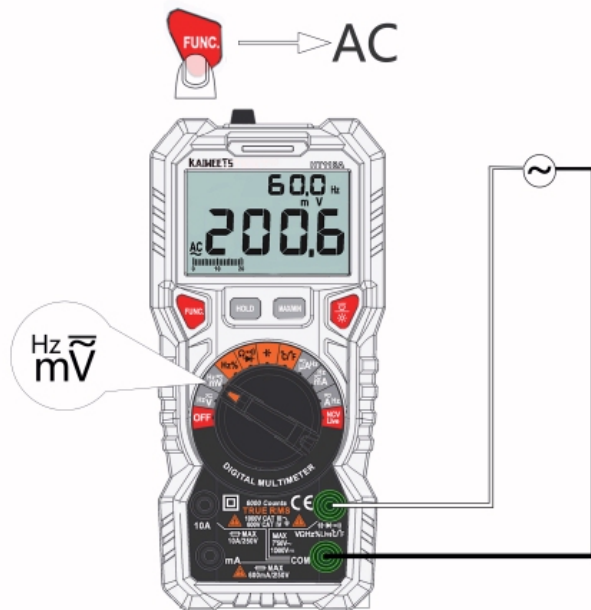
⚠ Don't use it to test DC 250V, the instrument may be damaged. Always test known voltage with the meter before use to confirm the instrument function is intact. Always test known voltage with the meter before use to confirm the instrument function is intact.

- 1) Turn the rotary switch to “  ” and select DC/ AC voltage function by "FUNC." key
- 2) Insert the red lead in “  ” terminal, insert the black lead in “COM” terminal.
- 3) Connect the test leads to the source or load to be measured.
- 4) Read LCD display, when measuring AC voltage the frequency is displayed simultaneously.

DC



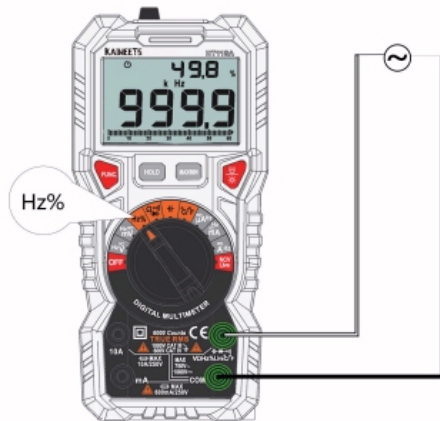
AC




Frequency/Duty measurement (Hz%)



⚠ The voltage above 10V can't be measured, otherwise, the instrument may be damaged.


- 1) Turn the rotary switch to “Hz%”
- 2) Insert the red lead in “ $\text{V}\Omega\text{Hz}\% \text{Live}$ ” terminal, insert the black lead in “COM” terminal.
- 3) Connect the test leads to the source or circuit in parallel to be measured, measure the frequency and duty.
- 4) Read the measurement result on the screen.

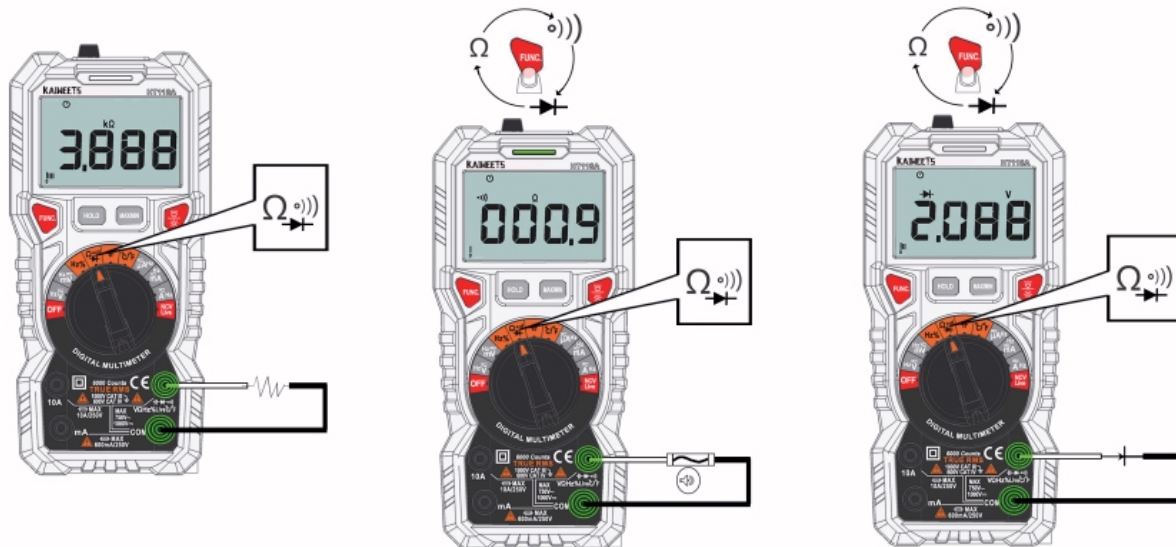


Resistance / Continuity / Diode measurement

 When measuring diode on the line, disconnect the power supply and discharge all the high-voltage capacitors. Otherwise, the instrument may be damaged



- 1) Turn the rotary switch to “  ” and select Resistance / Continuity / Diode measurement function by "FUNC."
- 2) Insert the red lead in “  ” terminal, insert the black probe in “COM” .
- 3) Connect the test leads to the source or circuit in parallel or diode to be measured.
Touch the diode anode with the red lead, the black lead contacts the diode cathode.
- 4) Read the measurement result on the screen.

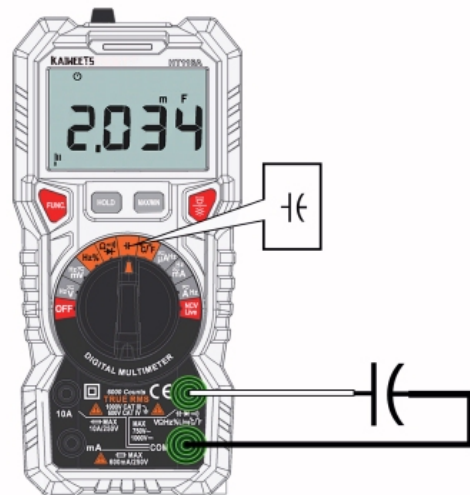
	Function	
	<p>It displays the approximate forward voltage value of the diode.</p>	<p>Forward DC current is about 2.5mA Reverse DC voltage is about 3V Overload protection:250V</p>



Capacitance measurement

⚠ When measuring Capacitance on the line, disconnect the power supply and discharge all the high-voltage capacitors. Otherwise, the instrument may be damaged and may be struck by electric shocks

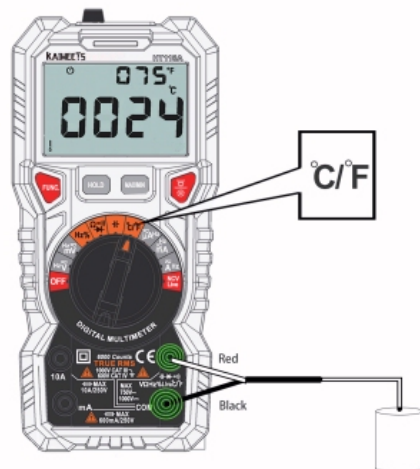
- 1) Turn the rotary switch to “  ”.
- 2) Insert the red lead in “  VΩHz%Live ” terminal, insert the black lead in “COM” terminal.
- 3) Contact the probe to the measured circuit or Capacitance, measure the resistance.
- 4) Read the measurement result on the screen.



Temperature Measurement

⚠ Don't touch the charged object when measuring temperature.

- 1) Turn the rotary switch to the “ °C/°F ”.
- 2) Insert the K-Type thermocouple into the meter. The thermocouple's positive (red) is inserted into the “ $\mu\Omega$ Hz%Live ” input, and the negative end (black) is inserted into the “COM” input.
- 3) Carefully touch the end of the thermocouple to the object being measured. Wait for the temperature reading to settle, then record the result from the LCD display.

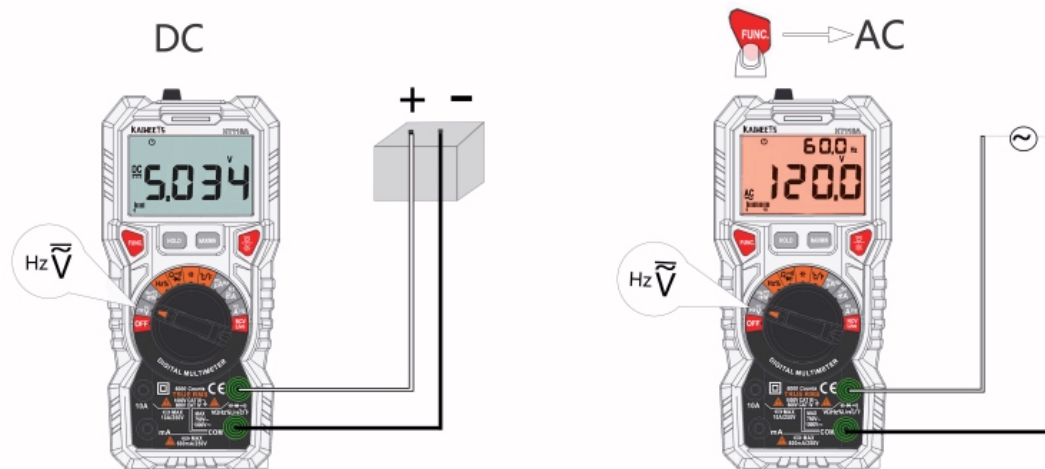


DC/AC current measurement

⚠ To avoid damaging the instrument or equipment, check the fuse before measuring and ensure that the measured current does not exceed the rated maximum current; use the correct input.

- 1) Turn the rotary switch to " $\widetilde{\mu A^{Hz}}$ " or " $\widetilde{mA^{Hz}}$ " or " $\widetilde{A^{Hz}}$ " and select AC or DC current function by "FUNC." key
- 2) Insert the red lead in "mA" terminal or "10A" terminal, insert the black lead in "COM" terminal.
- 3) Disconnect the power of the tested circuit; connect the meter to the circuit under test, then turn on the circuit power supply.
- 4) Read the measurement result on the screen. When measuring AC current, the frequency is displayed on LCD simultaneously.

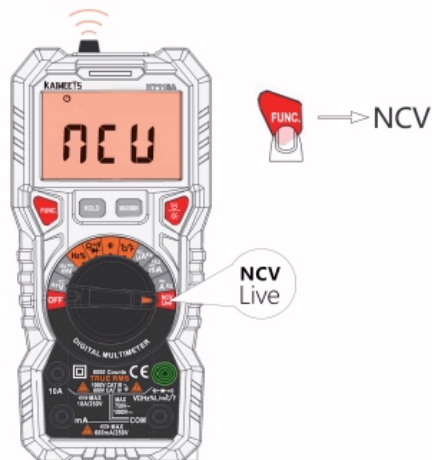
	Red Lead	Black Lead
μA^{Hz}	mA	COM
mA^{Hz}	mA	COM
A^{Hz}	10A	COM



NCV test

⚠ In order to avoid possible accidents such as electric shock or personal injury, please follow the safety regulations.

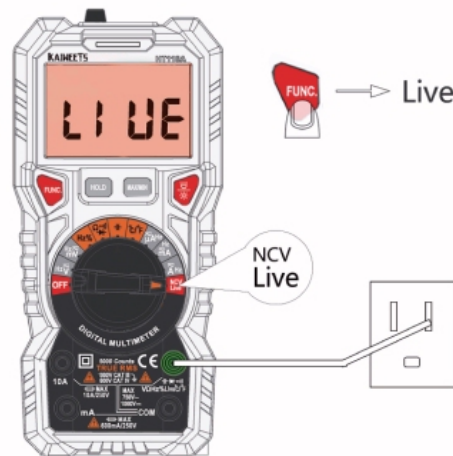
- 1) Turn the rotary switch to the “**NCV Live**” and Switch to NCV test function by "FUNC." key. Meter will display "NCV".
- 2) Then NCV probe gradually approaches the detected point.
- 3) When the meter senses weak AC signals, the green indicator lights up and meter beeps slowly.
- 4) When the meter senses strong AC signals, the red indicator lights up and meter beeps fastly.



Live test

⚠ In order to avoid possible accidents such as electric shock or personal injury, please follow the safety regulations.

- 1) Turn the rotary switch to the “**NCV Live**”, and Switch to live test function by "FUNC." key. Meter will display "LIVE".
- 2) Insert the red lead in “**VΩHz%Live**” terminal, Then the probe contact to the test point
- 3) When the meter senses weak AC signals, the green indicator lights up and meter beeps slowly.
- 4) When the meter senses strong AC signals, the red indicator lights up and meter beeps fastly.



General Specifications

Display Measurements	6000 counts, True - RMS
Safety / Compliances	CATIII 1000V,CATIV 600V
Maximum Voltage (between terminals and earth ground)	DC1000V/AC750V
Fuse protection	mA: F600mA /250V Fuse
	10A: F10A /250V fuse
Measurement Speed	3 times per second
Range	Auto
Battery	2 x 1.5V AAA Batteries (included)
Temperature	Operating:0° C ~ 40° C, <80% RH
	Storage:-10~60° C, <70% RH
Humidity	10° C non condensing

Accuracy Specifications

The accuracy applies within one year after the calibration.

Reference condition: the environment temperature 18°C to 28°C, the relative humidity is no more than 80%.

Accuracy: \pm (% reading + word).

DC/AC Voltage

Voltage	Range	Resolution	Accuracy	Input impedance	Maximum input voltage
DC Voltage	600mV	0.1mV	$\pm(0.5\% \text{ reading} + 3)$	10M Ω	1000V DC
	6V	0.001V			
	60V	0.01V			
	600V	0.1V			
	1000V	1V			
AC Voltage	600mV	0.1mV	$\pm(0.8\% \text{ reading} + 5)$	10M Ω	750V AC
	6V	0.001V			
	60V	0.01V			
	600V	0.1V			
	750V	1V			

DC/AC Current

Current	Range	Resolution	Accuracy	Overload protection	Maximum input current
DC Current	600μA	0.1μA	± (1.2% reading+3)	μA/mA: F600mA/250V fuse 10A: F10A/250V fuse	mA: 600mA A: 10A
	6000μA	1μA			
	60mA	0.01mA			
	600mA	0.1mA			
	10A	0.01A			
AC Current	600μA	0.1μA	± (1.5% reading+3)	μA/mA: F600mA/250V fuse 10A: F10A/250V fuse	mA: 600mA A: 10A
	6000μA	1μA			
	60mA	0.01mA			
	600mA	0.1mA			
	10A	0.01A			

Note: When measuring large current, continuous measurement don't than 15 seconds.

Resistance/Capacitance

	Range	Resolution	Accuracy	Overload protection
Resistance	600 Ω	0.1 Ω	±(1.0% reading+3)	250V
	6k Ω	0.001k Ω		
	60k Ω	0.01k Ω		
	600k Ω	0.1k Ω		
	6M Ω	0.001M Ω	±(1.5% reading+3)	
	60M Ω	0.01M Ω		
Capacitance	10nF (μF)	0.001nF (μF)	±(4.0% reading+5)	
	100nF (μF)	0.01nF (μF)		
	1000nF (μF)	0.1nF (μF)		
	10mF	0.001mF	±(5.0% reading+5)	
	100mF	0.01mF		

Frequency/Duty

	Range	Resolution	Accuracy	Overload protection	Voltage sensitivity
Frequency	10Hz	0.001Hz	±(1.0% reading+3)	250V	/
	100Hz	0.01Hz			
	1000Hz	0.1Hz			
	10kHz	0.001kHz			
	100kHz	0.01kHz			
	1000kHz	0.1kHz			
	10MHz	0.001MHz	±(3.0% reading+3)		
	1~99%	0.1%			
Duty	0 ~ 10MHz	/			0.2~10V AC
V	0 ~ 100 kHz				0.5~600V AC
μA/mA/A	0 ~ 100 kHz	/			≥ 1/4 Full range
Reference condition: between 18° C to 28° C, relative humidity is no more than 80.					

Maintenance

Clean

If there's dust on the terminal or the terminal is wet, it may cause measurement error. Please clean the instrument according to the steps below:

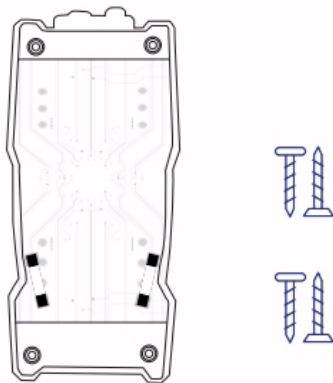
- 1) Switch off the power supply of the instrument and remove the test probe.
- 2) Turn over the instrument and shake out the dust accumulated in the input terminal. Wipe the outer cabinet with a damp cloth and mild detergent, do not use abrasive or solvent. Wipe contacts in each input terminal with a clean cotton swab soaked in alcohol.

WARNING

Please always keep the inside of the instrument clean and dry to avoid electric shock or instrument damage.

Replace the Fuse

- 1) Turn off the power supply of the instrument, and remove the probe on the instrument.
- 2) Use screwdriver to unscrew screws fixing the back cover, and remove the back cover.
- 3) Remove the burnt fuse, replace with new fuse of the same specifications, and ensure that the fuse is clamped in the safety clip.
- 4) Install the back cover, fix and lock it with screws.



Three Year Warranty

KAIWEETS will repair, without charge, any defects due to faulty materials or workmanship for three years from the date of purchase provided that:

- Proof of purchase is produced.
- Service/repairs have not been attempted by unauthorized persons;
- The product has been subject to fair wear and tear;
- The product has not been misused;

Defective products will be repaired or replaced, free of charge or at our discretion, if sent together with proof of purchase to our authorized distributor(s). For further detail of warranty coverage and warranty repair information, send email to support@Kaiweets.com.